4. ELVIS TUNING OPTIONS

The system administrator can configure the following items to tune ELVIS performance:

- The number of ELVIS Chart server processes

- The resolution of the ELVIS tactical display

- The frequency of Garbage Collection

- CERN httpd Server Configuration (for more information on the full suite of configuration options for this web server, consult CERN's home page at http://www.w3.org).

ELVIS Chart Server Process Control

Client browsers connecting to the ELVIS server request tactical map data whenever a virtual command center wall chart is accessed or a map redraw is selected (e.g., zoom, center, or plot control change). By default, four server processes (called Chartgrab) run in the background as the primary agents servicing browser requests. If four clients request tactical data at the same time, then all four Chartgrab processes are active. If a fifth client request is received, then the request is queued, pending completion of one of the previous four requests.

Based on the activity on the server, the default setting of four Chartgrab server processes can be changed, but increasing the number should be incremental since many factors (e.g., RAM) impact overall system performance. For optimal performance, the system administrator should establish multiple ELVIS servers and distribute the customer base by assigning different URLs.

In order to change the number of server Chartgrab processes, an environmental variable in the file */h/LVIS/Scripts/.cshrc.LVIS* should be changed; currently, this file has a line that reads:

setenv LVIS_NUMCHARTS   4

Values less than 1 or more than 8 are not allowed and are replaced at runtime with 1 or 8, respectively. For the new value to take effect, restart ELVIS by exiting GCCS/JMCIS and logging back in.

Resolution of ELVIS Tactical Display

There are four resolution settings for the ELVIS tactical display:

        Tiny Resolution: 200x150
        Low Resolution: 400x300

Medium Resolution: 600x450
High Resolution: 800x600

The resolution is set in the /h/LVIS/data/.cshrc.LVIS file, so an ELVIS server can only support one resolution. If different resolutions are required, then an ELVIS must be dedicated to each resolution. Note that higher resolutions will use more CPU cycles and bandwidth.

Garbage Collection Frequency

ELVIS processes create HTML files on the ELVIS server in the directory "/h/LVIS/data/pub/users". These files are submitted to the browser by the httpd daemon. The effective life span of these files is relatively short and depends on the contents of the browser's RAM cache. These files can be periodically deleted without an adverse impact on the operation of ELVIS and, most importantly, will free storage space on the hard disk. During installation, a cron job is added to the root crontab file that executes the garbage collection script *LVISSA_GarbageColl* every 24 hours. This script deletes all files under */h/LVIS/data/pub/users* that are older than a specified time threshold. By default, *LVISSA_GarbageColl* deletes all files less than one day old. If a longer persistence is desired, then the threshold may be modified by changing the "-mtime" parameter in the script's "find" command.

During the installation of ELVIS, the following line is added to the */usr/spool/cron/crontabs/root* file to launch the garbage collection script every day at 0500:

0 5 * * * /h/LVIS/progs/LVISSA_GarbageColl >/dev/null 2>&1

As always, the system administrator should monitor disk use. If required, an alternative method could be devised to delete files under */h/LVIS/data/pub/users* on a more frequent basis. However, do not delete files under */h/LVIS/data/pub/users/login_name/CUSTOM_MAPS*, where *login_name* is the name of a user. Also, do not delete files under */h/LVIS/data/pub/users/sysadmin*.

HTTP Server Configuration

The CERN httpd server is supplied with the ELVIS segment and may be configured by editing the file */h/LVIS/data/httpd.conf*. It is recommended that the supplied configuration be retained unless there is a compelling reason to make modifications. Currently, the configuration has the following attributes (see CERN's home page http://www.w3.org for more information).

- The next available port beginning with 9000 is used as the server's port.

- The root directory for the httpd server is */h/LVIS/progs*, and the public data directory is */h/LVIS/data/pub*.

- Access and error logs are enabled and may be viewed by selecting the **View System Logs** option on the system administrator's home page

Additional HTTP servers may run on the workstation. Their configuration will be controlled by a file other than */h/LVIS/data/httpd.conf*.